Chapter 3

TRANSCEIVER OVERVIEW

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Transceiver

3C 0500225 expl. view of NHC–3XN
6E 0260349 ass. parts of NHC–3XN

3C 0500226 expl. view of NHC–3AA
6E 0260350 ass. parts of NHC–3AA

3C 0500227 expl. view of NHC–3XB
6E 0260351 ass. parts of NHC–3XB

Introduction

Basic Construction

There are 7 basic parts:

– electronics module (radio module + shields)
– UI Module (flex)
– A–cover with key mats
– B–cover
– window
– antenna
– battery pack

Electronics Module

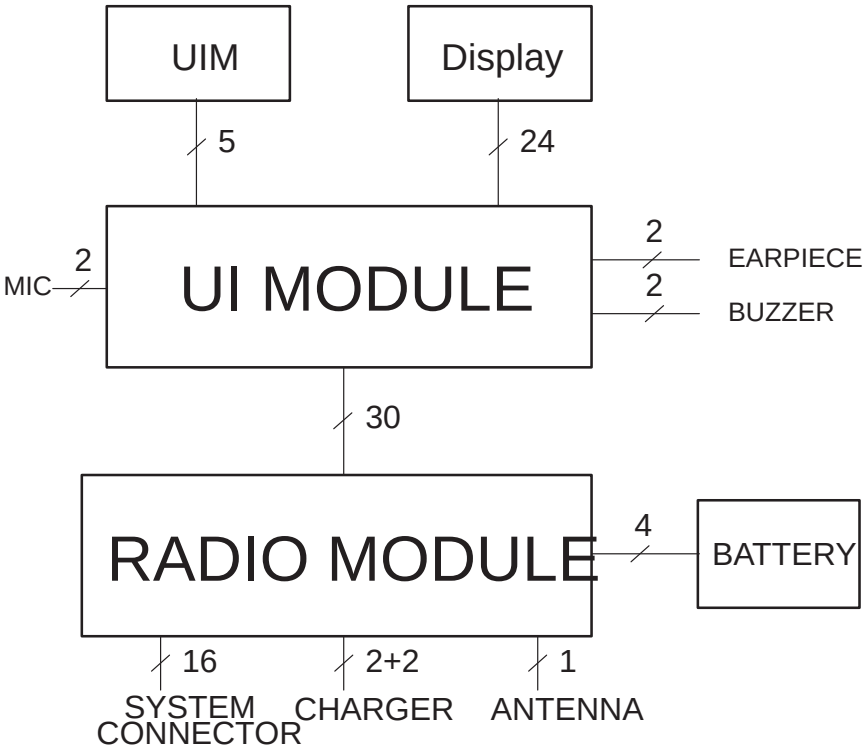
The Electronics module includes a 2–sided (components) pcb and 2 shielding covers (metallized plastic and moulded magnesium shields). Screws (3 pcs) and snaps are used for fixing the shields together.

UI Module

The UI module contains the following parts: electronics, mic with rubber cushion, earpiece with seals, buzzer with a seal, display, display driver, light guide, reflector, UIM reader, metal dome keyboard, illumination LEDs and connections to the Radio Module.

There are 2 versions of UI modules

Interconnection Diagram



Functional Description

Circuit Description

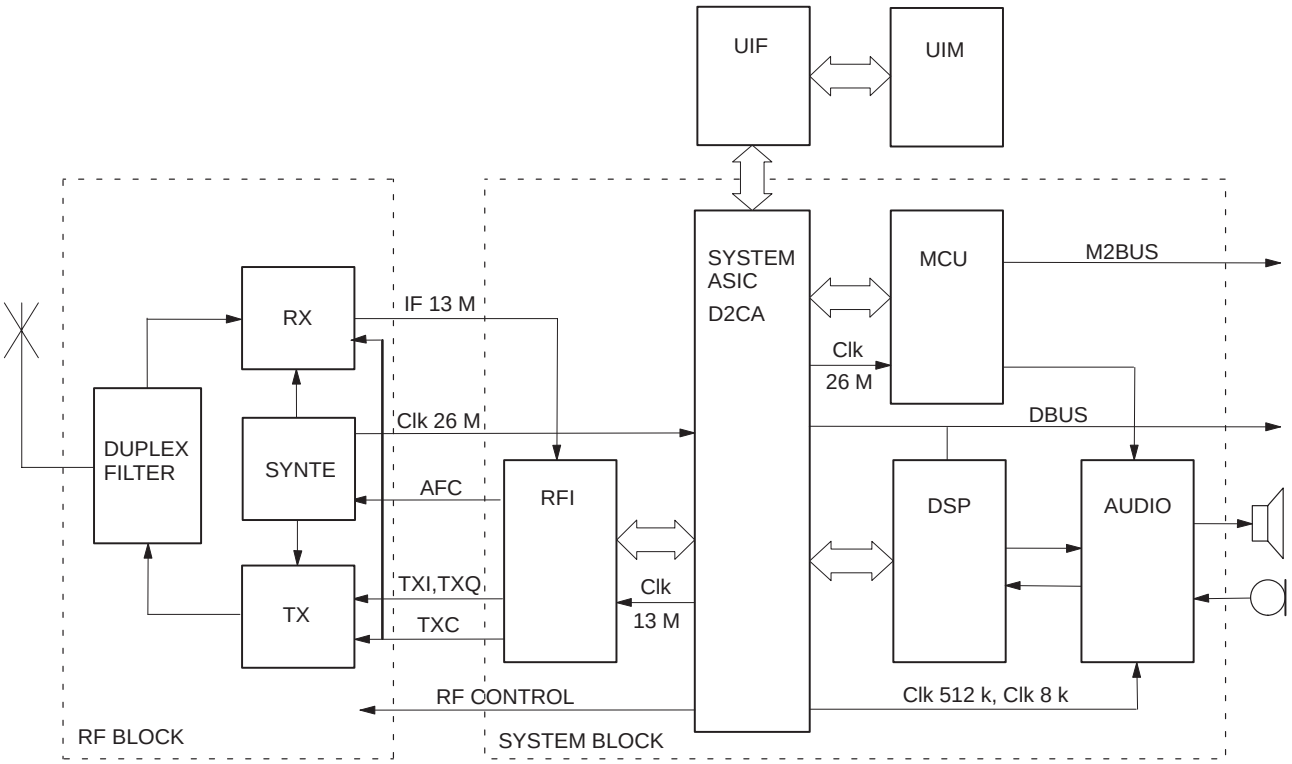
The transceiver electronics consist of the Radio Module (RF + System blocks) and the UIF Module. The UIF Module is connected to the Radio Module with a connector. System blocks and RF blocks are interconnected with PCB wiring. The Transceiver is connected to accessories via a bottom system connector with charging and accessory control.

The System blocks provide the MCU and DSP environments, Logic control IC (D2CA), memories, audio processing and RF control hardware (RFI). On board power supply circuitry delivers operating voltages for both System and RF blocks.

The general purpose microcontroller, Hitachi H8, communicates with the DSP, memories and Logic control IC (D2CA) with an 8–bit data bus.

The RF block is designed for a handportable phone which operates in the DCS1900 system. The purpose of the RF block is to receive and demodulate the radio frequency signal from the base station and to transmit a modulated RF signal to the base station.

Block Diagram



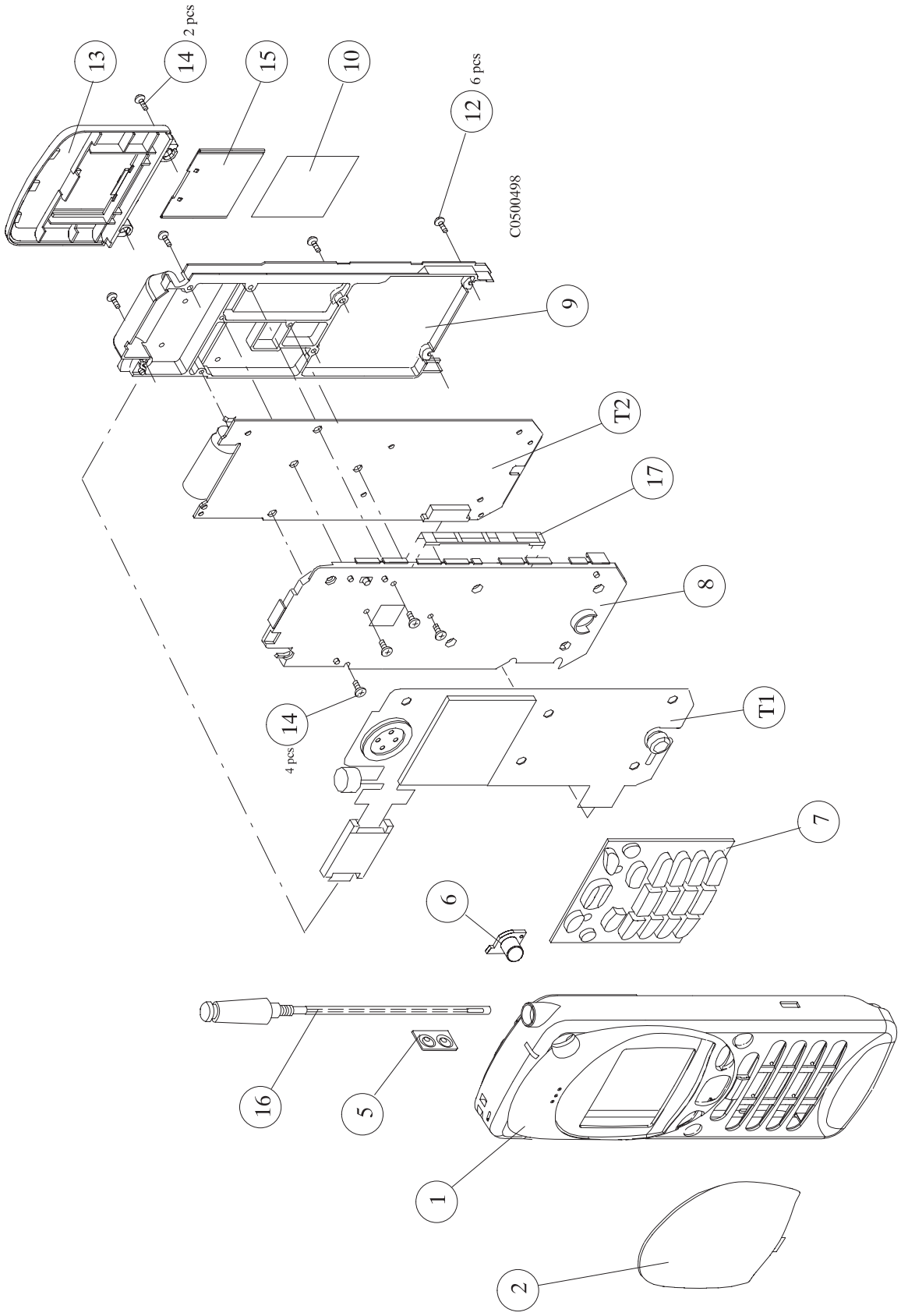
Power Distribution

The power supply is based on the ASIC circuit PSL+ for a baseband circuitry and on CRFCONT for RF. PSL+ consists of regulators and control circuits providing functions like power up, reset and watchdog. External buffering is required to provide more current. CRFCONT consists of eight separate regulators.

The MCU and the PSL+ circuits control charging together, detection being carried out by the PSL+ and higher level intelligent control by the MCU. The MCU measures battery and charger voltages as well as the temperature and size of the battery by means of the MCU internal ADC to sense the condition of the battery.

Detailed power distribution diagrams appear in Baseband block and RF block documents.

Exploded View of NHB–3NB



Assembly Parts of NHB–3NB

ITEM	Q'TY	CODE	DESCRIPTION	VALUE, TYPE
1		9450269	A cover	2D 24116 (NHB–3NB)
1		9457376	A cover	2C 26240
2		9457079	Window	3C 23086 (Nokia 2190)
5		9790055	Sidekeymat	3D 22995
6		9790062	Power keymat	4C 23396
7		9790154	Keypad	4C 25878
8		9450656	A shield	1D 26104
9		9510299	B shield	1D 24198 B
10		9380115	Continuous sheet	
12	6	6291662	PT screw	1.8x8 FeZn TX6
13		9450434	B cover	1D 24212
14	6	6290060	PT screw	M2x5–BT ZNB TORX6
15		9450230	SIM cover	3D 23018
16		0660111	Antenna	JTI/PCS1850–1990 MHz
17		9510286	Edge clip	4D 26101
T1		0200819	UIF module DU8C	
T2		0200943	System module DB6	

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